

REMARKS

Claims 1-12 are pending in this application. By this amendment, claim 1 is amended to even more clearly point out and claim Applicants' invention. Support for this amendment can be found on page 4 of the specification. No new matter has been introduced by this amendment.

Claim Rejections

Rejection Under 35 U.S.C. § 102

A. Response to Rejection of Claims 5, and 10-12 under 35 U.S.C. § 102(b) as being anticipated by Ricci et al.

In response to the rejection of claims 5, and 10-12 under 35 U.S.C. § 102(b) as being anticipated by International Patent Application No. WO 96/14533 of Ricci et al. ("Ricci"), Applicants respectfully submit that the reference does not teach all the elements of the presently claimed invention, and traverse the Rejection.

The Examiner indicates that after consideration of the structural limitations of the claims, the claims were treated as product claims, and then rejected over Ricci. Applicants' invention relates to a process for affecting a coupling between a plastic material and a metal surface comprising the steps of:

- a) applying a powder of an adhesive polymer composition to the metal surface;
- b) overmoulding the metal surface with a plastic material by injection moulding; and following step b)
- c) applying heat to the metal surface, thereby softening or melting the plastic material in contact with the metal surface.

As acknowledged by the Examiner, Ricci does not teach step c). In addition, however, the Examiner has not considered that the Examples listed on page 6 of the specification illustrate a direct comparison of an overmoulded plate made by a process including step c), relative to a plate produced according to a process not including step c). As the examples demonstrate, the plate made using the process of the invention exhibited a peel strength of at least 3 times the peel strength of the plate that did not include the heating step. Therefore, the product made by the

process of the invention is clearly different from and improved over the product of Ricci's process. Reconsideration and withdrawal of the Rejection respectfully is requested.

B. Response to Rejection of Claims 1-4, and 6-9 under 35 U.S.C. § 103(a) as being unpatentable over Ricci in view of Chaung.

In response to the rejection of claims 1-4, and 6-9 under 35 U.S.C. § 103(a) as being unpatentable over Ricci in view of U.S. Patent No. 6,207,089 of Chaung ("Chaung"), Applicants respectfully submit that a *prima facie* case of obviousness has not been made out by the Examiner and respectfully traverse the rejection.

With respect to the rejection under § 103, in order to establish a *prima facie* case of obviousness, the Examiner must establish all three of the following essential criteria: (1) there must be a motivation in the cited prior art to modify the references as suggested by the Examiner; (2) the cited references must teach or suggest each of the claimed elements; and (3) the cited references must provide a basis for a reasonable expectation for success. The motivation to modify and the reasonable expectation for success must come from the cited prior art and not the Applicant's specification. Further, it is not enough that a reference can be modified absent a suggestion in the cited prior art to undertake such modification.

As acknowledged by the Examiner, Ricci does not teach all the steps of the present invention, in that it does not disclose a heating step after the overmolding step. Nevertheless, the Examiner contends that Chaung remedies the deficiency of Ricci by providing the missing heating step. First, the presently claimed invention recites in step c) applying heat to the metal surface, thereby softening or melting the plastic material in contact with the metal surface. In contrast, in the process of Chaung, the softened state of the plastic material is maintained during overmoulding, since "softened plastic is introduced from an injection machine to the mold cavity" (col. 5, lines 46-48). The plastic therefore is not softened after the overmoulding step. Further, Chaung does not specifically teach a heating step after the molding step, as argued by the Examiner. Column 9, lines 23-33 of Chaung discusses applying heat to the metal perform before and during the step of injection moulding, as shown in Figure 9. The mold is heated before so that the superplastic alloy is deformed, and then while the injection cavity is filled. The molten

or softened plastic flows better than the solid plastic so the cavity is filled more easily. The very next paragraph of Chaung discusses the operation shown in Figure 10, where the mold base is moved apart from the first half mold block, and then as shown in Figure 11, where the second half mold block is also moved apart (col. 9, lines 34-36): Therefore, not only is a heating step after moulding not shown, no step is described after the injection moulding and before the removal of the superplastic alloy foil from the mold.

Second, the Examiner has suggested modifying Ricci as described by Chaung. However, Ricci describes as background such a coupling method where “the metallic pipe end is primed followed by overmoulding wherein the metallic pipe end is placed inside an injection mould in order to complete the connection (page 2, lines 20-23).” However, Ricci goes on to describe the problems associated with such a coupling arrangement as being “prone to leakage and can fail when the joint is under torsion (page 2, lines 23-25).” Therefore, Ricci actually teaches away from the disclosure of Chaung, so that these references are not properly combined. Finally, with regard to claims 2-4 and 6-9, the Examiner has stated that it would have been obvious to apply pressure to the metal surface since it is well-known in the molding art to apply pressure during a heating step to heat a perform more quickly. However, in the present invention, the application of pressure is not meant to heat the perform more quickly, but to improve the adhesion between the plastic material and the metal surface (page 4, lines 24-26). Further, since Ricci actually teaches away from Chaung, there is no reasonable expectation for success. Thus, since none of the essential criteria for a *prima facie* case of obviousness have been established, Applicants respectfully request that the Examiner reconsider and withdraw the § 103(a) rejection of claims 1-4, and 6-9, and allow those claims. Further, even if a *prima facie* case of obviousness could have been shown based on Ricci and Chaung, Applicants have overcome any such *prima facie* case of obviousness by setting forth in the specification the advantageous enhanced peel strength resulting from the process of the invention, as summarized on page 6, lines 6-26. These unexpected and improved results provide yet further reason for withdrawal of the obviousness rejection.

Applicants respectfully request that a timely Notice of Allowance be issued in this case. Should the Examiner have questions or comments regarding this application or this amendment, Applicants’ attorney would welcome the opportunity to discuss the case with the Examiner.

It is not believed that any fee is required for entry and consideration of this Amendment; nevertheless, the Commissioner is hereby authorized to charge U.S. PTO Deposit Account 08-2336 in the amount of any such required fee.

This is intended to be a complete response to the Office Action mailed November 20, 2003.

Respectfully submitted,

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(Date)

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I hereby certify that this correspondence is being deposited with sufficient postage thereon with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Non-Fee Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on February 19, 2004.

John A. Cutler
February 19, 2004
Date of Signature